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The leather industry of the
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Washington

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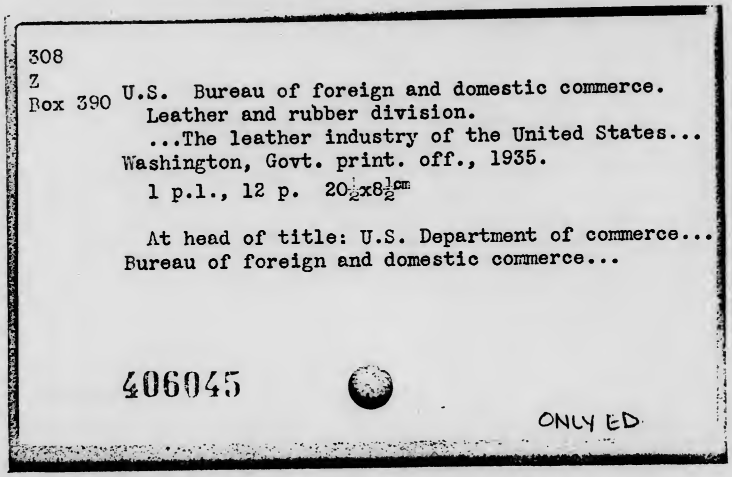

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U. S. DEPARTMENT OF COMMERCE
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THE LEATHER INDUSTRY OF THE UNITED STATES

✦

LEATHER
AND RUBBER DIVISION
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THE LEATHER INDUSTRY OF THE UNITED STATES

Conclusive evidence that the art of tanning hides and skins is one of the oldest of known industries is contained in historical records dating back to antiquity. From animals killed for food, primitive peoples saved the pelts and used them as clothing to replace the unsatisfactory garb of foliage. Later, such pelts were found to be serviceable for many other uses. So important did early man consider the knowledge of preserving or tanning skins, that it was kept secret within the immediate family. Although the methods used for tanning were handed down within the family from generation to generation, no known attempts were made at that time to improve on existing methods. Women played an important role in the foundation of this ancient industry, as the earlier processes were almost entirely accomplished by the females of the tribe. Women usually skinned the animals killed by the men, removed the flesh and tissue from the pelts, and accomplished whatever else was required to make these suitable for clothing and other uses. Frequently, the leather produced was too stiff to be made into comfortable clothing, but by chewing the skins the women made them soft and pliable. From this meager source, the knowledge of tanning spread throughout the universe. Records recently unearthed show that this industry flourished in Egypt almost 5,000 years ago. These documents also definitely prove that leather was highly regarded by the ancient Egyptians, who included tanned skins with gold, silver, gems, ivory, and rare woods in their gifts to kings and deities.

EARLY LEATHER PRODUCERS

Most proficient among the earlier producers of leather were the ancient Hebrews, who acquired much of their art from the Egyptians. These tanners were known to have made several successful attempts to improve upon the known methods of tanning. Hebrew tanners were credited with making better leather than had been previously produced, and with having first discovered the value of oak bark as a tanning agent. Because of their continued efforts, the leather produced by these ancient tanners was as good as that made in the United States prior to the use of tanning extracts.

Further proof of the importance of leather in these olden days can be gleaned from historical data concerning the older and more important countries of that time, many of which are no longer world powers. The favorable mention of both tanners and tanning in many of the old fables, myths, and legends indicates the high regard in which the industry was held. The early Greek tanners made remarkably good leather and frequently sold their products to the neighboring countries and colonies. In ancient Rome the value of leather was greatly appreciated, and Roman Legions warring in strange lands frequently erected tanneries to supply their leather requirements. Ruins of old Roman tanneries have been unearthed in France, England, and other countries where these soldiers sojourned at various times.

THE MEDIEVAL ERA

The tanning industry occupied an important position in the history of medieval Europe. Acquiring the knowledge of tanning either from their neighbors or from African or Asiatic sources, in a comparatively short time many European countries began to produce sizable amounts of leather. Virtually all the countries of that continent were manufacturing some leather before the discovery of America.

Leather Ornamentation and Fabrication

Prior to the sixteenth century, much progress had been made in the decorating of leather and leather goods, and leather became one of the most important commodities in the foreign trade of many European countries. Numerous artisans were specializing in the manufacture of leather and leather wares in England and France at this period; while in the Netherlands and Austria the production had reached such a volume as to leave a large surplus available for export. Many of the more important leather producers sent their wares to the numerous trade fairs held in different parts of the continent at stated times, where they were successful in selling them. One of the principal causes for the growing popularity of leather was the continual warfare prevailing throughout Europe during this period.

Growing Importance of Leather Industry

Before long, Germany also attained considerable prominence in the manufacture of leather, and German artisans aided in establishing tanneries in many other countries. All the earliest tanneries in North America were established by Europeans, and an Englishman is credited as being the first white man to produce leather in what is now known as the United States.

PERIOD OF DISCOVERY AND COLONIZATION

Tanning Among the Indians

When the earliest European explorers reached the New World, they found that the native Indians were tanning pelts which they used for clothing, shelter, bedding, footwear, and various other purposes. How long the Indians had been in possession of this knowledge and where it was acquired is lost in obscurity, but history records that they were successful in tanning hides and skins before the arrival of the white man. Nothing indicates that these people ever sought to improve their tanning methods or to make better varieties of leather.

Different methods of tanning were in vogue among the various tribes, but the Crows and the Navahos are said to have been the most adept. The former were highly skilled in the art of tanning, and their process was admittedly better than the methods in use by the other tribes. The Navahos were especially noted for the various designs and inscriptions with which they decorated their leather, and the manner in which they dressed the pelts.

Much of the leather made by the Indians was very pliable, and therefore usable for a wide range of articles. The softness and pliability of some of these leathers made them exceptionally popular with the white settlers, who used them extensively for many purposes. One type of leather made by the Indians, known as the "buckskin tan", has never been surpassed for softness and pliability, nor for its ability to shed water. To this day many of our museums contain articles made by the Indians more than 100 years ago which are still in a state of excellent preservation.

Work of the White Settlers

Exactly when or where leather was first produced by white settlers in what is now the United States remains a matter for question, as historical data do not agree. From authoritative sources, however, it is learned that Experience Miller, a tanner, arrived in the Massachusetts Colony on the good ship *Anne* in 1623, and shortly after his arrival began to tan leather there. The earliest available record of the manufacture of this commodity in the Virginia settlements, which were established before those in Massachusetts, is that of Captain Mathews, who erected a tannery prior to 1635. Captain Mathews also produced footwear, operated a mill, was a member of the Legislature, and was generally credited with being one of the leaders of the community.

Materials Used

No information could be obtained showing production of leather in the Colonies prior to 1623.

A wide range of raw materials was used by these early tanneries, and owing to the lack of any large and steady supplies of hides and skins from domesticated animals, many tanners produced leather largely from the pelts of wild animals. Owing to the high cost of leather articles coming from Europe, the colonists used large quantities of domestic leathers. Although the products fashioned from these were not always as well made as those which came from Europe, the quality of the leather was quite as good as of that manufactured in the mother country.

Establishment of Tanning Plants

As the number of settlers coming to the Colonies increased, the demand for leather showed a continued expansion, and various settlements offered inducements to tanners to settle in their midst and establish a leather industry. This resulted in a steady growth in the number of tanning plants, and by the close of the seventeenth century more than 200 tanneries were scattered among the American Colonies. These industries were founded by people who had learned the trade in Europe, or by those who, after having served their apprenticeship in local plants, had begun making leather on their own account. Leather production became important in practically all the Colonies with the exception of the Carolinas, where little interest was shown in this industry and where substantial quantities of hides and skins were lost because of the lack of knowledge in tanning; however, substantial numbers of raw hides and skins were exported each year from this area, so that not all the local supplies were permitted to be wasted.

Continued progress was made by the industry, and by 1750 more than 1,000 leather-producing plants had been established in the Colonies. Leather continued to be in greater demand with the passing years, until in the closing year of the eighteenth century there were 2,000 tanneries in the United States; and although the plants were small, aggregate production was estimated at almost $10,000,000 (individual output seldom amounting to more than $5,000 annually).

New Sources of Tanning Materials

During the first half of the following century much progress was made when it was discovered that hemlock bark and chestnut wood contained suitable tannins for processing leather. New tanneries were established near the sources of these tanning materials, in order to avoid paying heavy transportation charges to distant tanneries. It was not an infrequent occurrence to dismantle tanneries when the local supplies of tanning materials were exhausted and move them to other areas where such supplies were plentiful.

NINETEENTH CENTURY TO PRESENT

Development of Tanning Machinery

Some important developments favorable to the leather industry occurred during the first half of the nineteenth century. Prior to 1800 most of the operations in tanneries were accomplished by hand, but the inventive genius of the early American tanners soon supplied machinery and other improved equipment for their industry. A splitting machine was patented in 1809, which was credited with being able to split a hide into almost any desired thickness. The splits were known as "grain" or "flesh" in the trade, depending on the side of the hide or skin used. This splitting process was beneficial to tanners because it enabled them to practically double their leather output without using increased quantities of hides and skins. Shortly afterward, a machine was invented which would flesh and dehair hides and skins—operations which were formerly accomplished by hand and which took a much longer period of time than by machine. Other machines and equipment were developed, and with the aid of these the United States became the leading leather producer of the world.

In 1800 there were 2,400 tanneries in the United States, which made about $11,000,000 worth of leather; while in 1850 there were 6,644 tanneries, which made $41,564,000 worth of this product.

Further progress was made in the closing years of the nineteenth century, and the value of the production continued to increase. The use of machinery replaced hand operations almost entirely and resulted in the establishment of large tanneries which could not be dismantled and moved. The result was a decline in the number of plants, as the large establishments were able to produce more efficiently and at lower production costs. The development of railroads in the United States also aided the industry considerably, as it was possible to haul the raw materials to the tanneries at much lower costs.

The Chrome Process

The experiments continually under way to improve methods of production eventually led to the use of tanning extracts instead of barks.

Further research was responsible for shortening the time required for tanning and for the perfecting of the chrome tanning process. Prior to the development of this process, vegetable tanning materials—barks, wood, nuts, and leaves—were the only source of tannins; but with the application of modern technology, it became possible to use mineral tannins. This new method required a much shorter period for tanning than was needed for the vegetable process and made leather of suitable quality. By the close of the nineteenth century, more than 75 percent of all the upper leather manufactured in the United States was made by the chrome tanning process. Despite the decline in the number of tanneries to but 1,787 in 1899, the value of the production had increased in that year to more than $204,038,000, and the United States continued as the leading leather-producing country in the world. Other countries purchased American equipment and followed our methods of tanning in order to increase and improve their own production.

Increased Efficiency

Favorable progress in the tanning industry has continued during the years of the present century. Although the economic depression following 1930 had an unfavorable effect on the leather as well as other industries, production has increased in 1934 and 1935, and both domestic and foreign sales have been higher than in the years just preceding. The less efficient producers have retired from this field of endeavor; and although the number of tanneries is now less than in the early part of the century, production has been well maintained. The latest report of the Bureau of the Census, covering reports from 373 tanneries for the year 1933, places the value of the leather production at $216,970,472, as compared with a value of $458,307,954 for leather made by 471 tanneries reporting in 1929.

Sources of Raw Materials

In order to fill the requirements of tanning materials, many of which cannot be obtained from local sources, purchases are made from various parts of the world. These imports were valued at more than $5,500,000, including extracts, in 1934, among the more important of which were quebracho from Argentina and Paraguay; mangrove from the Philippines; sumac from Italy; valonia from Turkey; myrobalans from British India; gambier from Netherland India and British Malaya; wattle from the Union of South Africa; gallnuts from China; and other materials from various European countries. Owing to the improved activity of our tanning industry, these imports are expected to increase. Moreover, it must be remembered that large amounts of domestic tanning extracts, such as chestnut and hemlock, are also used.

Despite the rather large domestic supply of hides and skins, this is not sufficient to meet the demand, and important quantities must be imported. The Department of Agriculture reports the production of these in 1934 at 13,262,000 cattlehides, 9,300,000 calfskins, 22,100,000 sheep and lamb skins, and less than 200,000 goat and kid skins. In the same year, the domestic tanning industry consumed approximately 19,700,000 cattlehides, 12,400,000 calfskins, 34,200,000 sheep and lamb skins, and almost 45,000,000 goat and kid skins. Besides these varieties, quantities of reptile, shark, kangaroo, ostrich, and other hides and skins from outside sources were

also used. Foreign hides and skins valued at more than $35,250,000 were imported for consumption by the United States during 1934; these were obtained from all continents of the world, and more than 110 countries participated in this trade.

FOREIGN TRADE

More leather is manufactured in the United States than in any other country, but Americans also use more leather than do the inhabitants in any other part of the world. For this reason, the exports are not so large as might be expected from such a large supply, and shipments abroad from this country are exceeded by those from Germany. All varieties and grades of leather are made in the United States in substantial amounts (varying according to the prevailing demand), from the cheapest to the very best. Our best qualities compare favorably with the highest grades made in other countries, and the American leathers have a worldwide reputation for quality. During 1934, more than 90 different foreign countries made direct purchases of leather from the United States, while several others made indirect purchases. This wide distribution speaks favorably for the quality of the United States product. Available data show that no other exporting country sold its products to as many different markets.

The Export Trade

The figures given below show the value of the leather exported from the United States during the past 10 years, and the principal countries of destination in the year 1934, as published in Commerce and Navigation of the United States, the official statistical record of our trade with foreign countries.

Total exports:	
1925	$52, 155, 094
1926	49, 814, 515
1927	54, 003, 342
1928	55, 177, 834
1929	42, 942, 542
1930	35, 467, 681
1931	25, 612, 076
1932	13, 150, 006
1933	13, 778, 604
1934	15, 805, 519
Principal markets in 1934:	
United Kingdom	$2, 906, 995
Canada	1, 355, 592
Switzerland	1, 223, 939
Italy	1, 143, 422
Cuba	910, 281
Philippines	765, 387
France	719, 352
Germany	534, 276
Netherlands	489, 360
Union of South Africa	377, 986

The Import Trade

Because the United States is the largest leather-consuming country in the world, foreign tanners are attracted to this market and continually offer keen competition to the domestic producers. Owing to various conditions, foreign suppliers were in a favorable position to operate on the American leather market in 3 of the past 10 years, and were successful in making exceptionally large sales. However, since 1929 there has been a consistent decline in our imports of leather, although there was a slight increase during 1933. An outstanding feature of the United States import trade in leather is the relatively small number of countries participating, as compared with the large number of countries purchasing this product from American sources. Less than 35 countries accounted for all the leather imported into the United States in 1934, while almost 90 percent of the total imports were supplied by the 6 leading countries; only 2 countries, the United Kingdom and Germany, sold more than $1,000,000 worth of leather to the United States during 1934.

The following figures show United States imports of leather during the past 10 years and principal countries of origin during 1934, as published in Commerce and Navigation of the United States.

Total imports:	
1925	$22, 412, 206
1926	28, 622, 334
1927	37, 435, 980
1928	43, 307, 922
1929	44, 559, 116
1930	23, 727, 904
1931	10, 595, 469
1932	6, 846, 578
1933	9, 786, 192
1934 (imports for consumption)	6, 346, 028
Principal countries of origin:	
United Kingdom	$2, 098, 002
Germany	1, 631, 755
France	998, 749
Netherlands	410, 814
British India	277, 731
Canada	276, 762
Denmark	122, 007
Czechoslovakia	110, 449
Belgium	77, 740
Poland	77, 101

Nature of Foreign Trade

From the statistics given, it can readily be seen that the value of the United States leather exports is much larger than that of imports. In only one year of the present century has the value of the imports been larger, and that was in 1929. An important factor to be remembered in this trade is that while almost all the leather exported from the United States is in the finished state and ready for use, a considerable proportion of the imports consists of partly tanned hides and skins requiring further processing. Partly tanned leathers are included in the importations from the United Kingdom, France, and Germany; while almost all the purchases from British India are in this state. Another interesting feature of this trade—also shown in the statistical data presented—is that of the 10 principal markets for American leathers, 5 (United Kingdom, France, Germany, Netherlands, and Canada) also rank among the first 10 leading suppliers of this commodity to the United States. Practically all types of leather are included in both the import and the export trade, but uppers and patents comprise the largest share of the total. European countries purchase the greater part of the leather exported from the United States and also supply the largest proportion of the imports. The United Kingdom is the principal purchaser of American leathers and is also the main supplier of leather to American importers. Preliminary statistics for the early months of 1935 point to a continued increase in the exports and a further slight decline in the imports of leather by the United States.

USES OF LEATHER

Leather has a wide range of uses, and the general demand for this commodity has shown a constant increase in late years. Each year sees the introduction of leather into the making of articles for which other materials were formerly used, resulting in an increased market for this commodity. However, about 80 percent of the leather produced in this country still goes into the manufacture of footwear. Almost every type of hide or skin tanned into leather has several uses; and while, by splitting the hide, many of the heavier types can be used for some of the purposes for which the lighter varieties of skins are utilized, the lighter kinds cannot readily be used for the same purposes as the hides, particularly in the making of sole and belting leathers.

Not only have new uses been found for leather, but many new materials have been used for the production of leather in recent years. Many of these new products became popular and are being steadily manufactured; while others were only passing fads and have never come into large demand. Among the various types of skins being used for leather in recent years and not consumed for this purpose in substantial amounts previously are snake skins, ostrich skins, peccary skins, shark skins, and lizard skins. Other varieties which have been tanned in recent years and which are no longer available in large amounts, either because of a lack of steady and suitable supplies or because of the very small demand, are monkey skins, frog skins, and turtle skins.

The following are among the more important uses of the more staple types of leathers being produced in the United States. Those leathers designated as uppers are the kinds used for shoe upper leathers, to distinguish them from the heavy types used for soles.

Cattlehide.—Sole, belting, upper, patent, harness, saddlery, case, bag, strap, glove, upholstery, garment, and rawhide leathers.

Calf and kip.—Upper, fancy, garment, glove, case, bag, and rawhide leathers.

Goat and kid.—Upper, fancy, glove, upholstery, lining, and bag leathers.

Sheep and lamb.—Upper, lining, glove, garment, hat sweats, fancy, bookbinding, bag, roller, chamois, and novelty leathers.

Cabretta.—Upper, lining, glove, and fancy leathers.

Kangaroo and wallaby.—Upper leathers.

Deer and elk.—Upper, glove, and garment leathers.

Horse and colt.—Upper, sole, glove, and garment leathers.

Seal.—Fancy, pocketbook, and bag leathers.

Pig and hog.—Glove, fancy, and welting leathers.

Shark.—Upper, fancy, bag, and case leathers.

Reptile.—Upper, fancy, pocketbook, and bag leathers.

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